



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,116	06/27/2003	Helmut W. Kucera	IR-3332(CRD)	9257

7590 09/27/2006

LORD CORPORATION  
111 Lord Drive  
P.O. 8012  
Cary, NC 27512-8012

EXAMINER

TUROC, DAVID P

ART UNIT	PAPER NUMBER
----------	--------------

1762

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/609,116

Applicant(s)

KUCERA ET AL.

Examiner

David Turocy

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15-28 and 30-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-28 and 30-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The applicant's amendments, filed 1/13/2006, have been fully considered and reviewed by the examiner. Claims 1-13, 15-28, and 30-34 remain pending.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims are directed to newly added limitations and are therefore deemed moot, such limitations will be addressed in the rejection below.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1762

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 6-13, 16, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/43131 by Kucera et al. ("Kucera") in view of US Patent 4766844 by Brewer et al ("Brewer") and further in view of US Patent Publication 2004/0202793 by Harper et al. ("Harper").

Claims 1, 5, 6, 12, 19, 23, and 27: Kucera teaches of coating a metal substrate by bringing the metal substrate into contact by immersion with an autodepositing composition to form a first film on the substrate surface (Example 3). Kucera discloses drying after contact with first composition (Example 3). Kucera also discloses bring the metal substrate into contact with a second composition and a subsequent drying (Example 3).

However, Kucera fails to teach of grasping the substrate with an articulate electromechanical device and articulating the substrate. Brewer teaches coating a metal substrate by immersion using an microprocessor controlled robot arm to reduce the time required to complete the process (Column 1, lines 21-25). Brewer discloses the metal substrate is rotated after immersion into the first composition and second composition (Column 2, lines 50-52). Brewer discloses removing the substrate from the bath and then rotating the substrate (Column 2, lines 50-55).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to program the electromechanical device of Brewer to use the process steps as suggested by Kucera to provide a desirable coating on a metal substrate because Brewer teaches an electromechanical device with a programmable controller reduces time required to complete process.

Kucera in view of Brewer teaches to one of ordinary skill in the art to rotate the wet substrate after removal from the immersion bath, however, Kucera in view of Brewer fails to disclose articulating by rotating the wet substrate to provide a uniform coating thickness. However, Harper, teaching of a dipping method, discloses removing the substrate from the immersion bath and rotating the substrate so that excess coating material is spun off the substrate (0027). Harper discloses the dipping, removal, and spinning, will eliminate uneven surface coatings and produce substantially uniform coating on the entire substrate (0031).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kucera in view of Brewer to rotate the wet substrate upon removal from the immersion bath with a reasonable expectation of success as suggested by Harper to reap the benefits to removing excess coating liquid from the substrate surface and provide a uniform coating over the entire substrate. Please note that the test of obviousness is not an express suggestion of the claimed invention in any or all references, but rather what the references taken collectively would suggest to

Art Unit: 1762

those of ordinary skill in the art presumed to be familiar with them (*In re Rosselet*, 146 USPQ 183).

Claim 2,7 and 20: Kucera discloses a dry film thickness of 10-30 microns and also discloses the length of time metal substrate is immersed in the solution determines the thickness of the film (Page 21, lines 11-17). It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Claim 3, 13, 21, and 28: Kucera discloses that typically the bath residence time is from 5 to 120 seconds and more preferably 10 to 30 seconds (Page 21, lines 11-17). Kucera also discloses the metal substrate is dipped in the first composition for 15 seconds and the second composition for 10 seconds (Example 3).

Claim 8 and 24: Kucera discloses a first composition of a metal treatment and a second composition of a primer (Example 3).

Claim 9, 10, and 25: Kucera discloses the first composition comprises an acid and a phenolic resin (Example 3). Kucera also discloses the second composition comprises a phenolic resin and a flexibilizer (Example 3).

Claims 11 and 26: Kucera discloses drying the metal substrate after each immersion step (Example 3). It is the examiners position that the drying at elevated temperatures as disclosed by Kucera inherently utilizes heated zones to dry the substrate.

Claims 16, 30, and 31: Kucera in view of Brewer and further in view of Harper teach all the limitations of these claims, except they fail to disclose a substrate displacing at least 0.25% of the volume of the immersion bath and a bath turnover of 1 hour to 5 days.

However, it is the examiners position that the prior art and the present claims, reflected by claim 11 and 25, teach all the same process steps and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Both processes, prior art and applicants, teach of immersing a metal object into a metal treatment bath to form a uniform coating of micron size, therefore the immersion bath of the prior art must necessarily provide the same substrate displacement and bath turnover.

6. Claims 4, 5, 15, 22-28, 30-31 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kucera in view of Brewer and Harper and further in view of US Patent 4657788 by Benton et al ('Benton').

Claims 4 and 22: Kucera in view of Brewer and Harper is applied here as applied above in the 35 USC 103(a) rejection. However, Kucera in view of Brewer and Harper fails to teach of articulating while in contact with immersion bath.

Benton, teaching autodepositing coating on metal substrates, discloses agitating the coating composition while immersing the metal substrate helps in forming a uniform coating, which can be accomplished by moving the substrate in the coating bath (Column 5, lines 37-43).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kucera in view of Brewer and Harper to move the substrate in the coating bath suggested by Benton to provide a desirable uniform coating on a metal substrate because Kucera in view of Brewer and Harper teaches immersing a metal substrate in a autodeposition bath and Benton teaches a uniform coating is formed by moving the substrate in the bath.

Claim 15: Kucera in view of Brewer and Harper teach all the limitations of these claims as discussed above, but fails to teach of displacing at least 0.25% of the volume of the immersion bath and a bath turnover of 1 hour to 5 days.

However, it is the examiners position that the prior art and the present claims, reflected by claim 4, teach all the same process steps and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Both processes, prior art and applicants, teach of immersing a metal object into a metal treatment bath to form a uniform coating of micron size, therefore the immersion bath of



Art Unit: 1762

the prior art must necessarily provide the same substrate displacement and bath turnover.

Claim 28: Kucera in view of Brewer and Harper and further in view of Benton fails to explicitly disclose the articulation in the bath includes removal of entrapped air. However, However, the prior art and the present claims, reflected by claim 28, teach all the same process steps using similar materials and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Therefore by moving the substrate in the coating bath to agitate the coating composition while the substrate is immersed, it must necessarily result in removing entrapped air. Either 1) the applicant and the prior art have different definitions for articulating, or 2) the applicant is using other process steps or parameters that are not shown in the claims.

7. Claims 17, 18, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kucera in view of Brewer, Harper and Benton and further in view of US Patent 4103049 by Nishida et al ("Nishida").

Kucera in view of Brewer and Benton is applied here as applied above in the 35 USC 103(a) rejection. However, Kucera in view of Brewer fails to teach cleaning the substrate using a cleaning device.

Nishida, teaching of a process for applying a coating to a metal substrate, discloses that the metal substrates were cleaned in a conventional alkali metal cleaning solution prior to immersing in the coating composition (Column 8, lines 60-65).

Art Unit: 1762

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kucera in view of Brewer to clean the metal substrate prior to immersing as suggested by Nishida to provide a desirable coating on a metal substrate because Kucera in view of Brewer teaches immersing a metal substrate into a coating bath and Nishida teaches it is known in the art to clean the metal substrate using a chemical cleaner prior to immersing in the coating bath.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-


Art Unit: 1762

2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy  
AU 1762



**TIMOTHY MEEKS**  
**SUPERVISORY PATENT EXAMINER**